

Notice of Allowability

Application No.

10/710,686

Examiner

Ana M. Fortuna

Applicant(s)

BARAK ET AL.

Art Unit

1723

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 2/09/06.
2. ☒ The allowed claim(s) is/are 2-12, 14-18, 32-36 and 2030.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date 1/20/06
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☒ Interview Summary (PTO-413), Paper No./Mail Date _____.
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☒ Other See Continuation Sheet.

Continuation of Attachment(s) 9. Other: drawings filed on 7/23/04 are approved.

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Solani S. Srivastava on 7/21/06.

The application has been amended as follows:

In claims 2-12, 14-18, 20-30, 32-36 line 1, delete the brackets."[" and "]".

In claim 8, line 2, after the word "along", delete "the" and insert - -a- -;

line 3, delete the brackets around the numbers 1, 2, 3.

Claim 14 (Presently Amended) A method of removing phosphorous from phosphorous containing waste, comprising the steps of (a) contacting the phosphorous containing waste [with] at one side of a cation exchange membrane, contacting the other side of the membrane with a magnesium containing solution, passing the magnesium through the membrane to the waste containing phosphorous; (b) and precipitating the phosphorous from the waste as struvite;

wherein the membrane is a polymeric membrane selected from the group consisting of negatively charged sulfonic acid, carboxylate, sulfate, sulfonated, perfluorosulfonate, phosphate, phosphonate and alcohol and combinations thereof, embedded in a nylon or acrylic membrane.

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In claim 20, lines 3 and 4, delete "for", and in line 4, after "suitable" insert - - magnesium- -.

In claim 21, line 2, delete "the second chamber for containing suitable ionic salts and solutions contains".

In claim 22, line 2, delete "the first chamber for containing phosphorous containing waste", and in line 4, delete "the second chamber for containing suitable ionic salts and solutions".

In claim 23, line 2, delete "for containing phosphorous containing waste", and in line 3-4, delete "for containing suitable ionic salts and solutions".

Claim 25 (Presently Amended) A method of removing phosphorous from phosphorous containing sewage including filtrate and biosolids comprising the steps of:

(a) contacting the sewage [with a first polymeric membrane reactor and removing phosphorous as struvite;] at one side of a cation exchange membrane reactor, contacting the other side of the membrane with a magnesium containing solution, passing the magnesium through the membrane to the sewage containing phosphorous;
(b) and precipitating the phosphorous from the waste as primary struvite;

(b) adding Mg to make the sewage supersaturated with struvite; and

(c) contacting the supersaturated sewage with a [second] monomolecular membrane and removing phosphorous as secondary struvite.

In claim 26, line 1 delete "first".

In claim 27, line 1, delete "second".

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In claim 32, line 6, after "struvite", delete "or", and insert - - and at least - -.

Conclusion

2. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Additional cited references are directed to processes of separating phosphorus from waste by forming struvite compound.

REASONS FOR ALLOWANCE

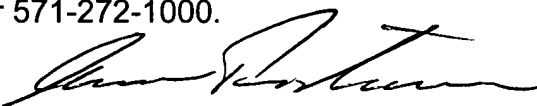
3. The following is an examiner's statement of reasons for allowance: claims 2-12, 14-18, 20-30, and 32-36 are allowed over the prior art of record. The prior art of record fails to disclose or suggest the struvite formation or phosphorous precipitation by using the particular negatively charge membrane organized and monolayers, miscelles, lamellar bilayers or bilayers vesicles as claimed in claims 2, 32, and dependent claims. The use of a negatively charged polymeric membrane as claimed in claim 14 for precipitation of phosphorous as struvite, or its combinations with the monolayer or miscellar membrane is also not disclosed in the prior art of record. The apparatus as arranged to contact and containing the waste and the magnesium salt in contact with the membrane as claimed in claim 20 are also not suggested as arranged for the particular use. The membrane is admitted by Applicant as prior art, and its position within a chamber is also known, however, the system arrangement containing phosphorous containing waste and arranged to pass magnesium containing salt from a container containing the specific solution is suggested in the prior art of record.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ana M. Fortuna whose telephone number is (571) 272-1141. The examiner can normally be reached on 9:30-6:00 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wanda L. Walker can be reached on (571) 272-1151. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Ana M Fortuna
Primary Examiner
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